

**BYZANTINE GOLD BULLAE,
WITH A CATALOGUE OF THOSE AT DUMBARTON OAKS**

PHILIP GRIERSON

BYZANTINE gold bullae¹ are so closely related to Byzantine coins that they have sometimes been confused with them. Eckhel and Wroth supposed the isolated bullae they found in the Vienna and London collections to be coins and described them as such, while Dölger for his part published several nomismata which had been fastened to documents at Mt. Athos as being bullae. There are at Dumbarton Oaks eight gold bullae, ranging in date from the ninth to the fifteenth century, and since they will not be included in the forthcoming catalogue of the coins they are put on record here. The fact that so few of the thirty to forty surviving bullae are available in locations where they can be scientifically examined and compared with others of different periods justifies a rather lengthy preliminary discussion of the class of object which they represent.

I

Confusion between coins and gold bullae is easily understandable. Imperial lead bullae are sometimes identical with coins in type,²

¹ The best survey is by F. Dölger, *Aus den Schatzkammern des Heiligen Berges* (Munich, 1948), pp. 316-9, but his earlier accounts cannot be neglected: *Facsimiles byzantinischer Kaiserurkunden* (Munich, 1931), p. 7, and "Der Kodikello des Christodulos in Palermo," in his *Byzantinische Diplomatik* (Ettal, 1956), pp. 37-8, 42-4. (This reprint of the last is preferable to the original article of 1929, since it contains much supplementary matter.) Cf. also F. Dworschak, "Byzantinische Goldbullen," *BZ*, XXXVI (1936), pp. 36-45. The sections dealing with Byzantine gold bullae in A. Eitel, *Über Blei- und Goldbullen im Mittelalter* (Freiburg i. Br., 1912), pp. 27-9, 72-4, are now completely superseded.

² Cf. G. Schlumberger, *Sigillographie de l'empire byzantin* (Paris, 1884), pp. 417-23, where the types illustrated present many analogies with coins. On the general relationship, see V. Laurent, "Sigillographie et numismatique," *Cronica numismatică și arheologică*, XIII (Bucarest, 1938), pp. 38-60.

but lead was not used for coinage. Gold bullae were of the same metal as nomismata and up to the end of the Comnenid period they both resembled coins in appearance and had their weights regulated in terms of monetary units.

This latter feature, which misled Wroth into treating a bulla of Basil I as a four-solidus coin, accounts in large measure for the importance attached to such bullae by the Byzantine chancery. The use of gold would in itself draw attention to the magnificence of the imperial office and enhance the solemn character of documents it was used to seal. More subtly, gold bullae geared to the monetary system could serve as an instrument of policy, for in diplomatic correspondence the size of the bulla was determined by the dignity of the recipient, or sometimes by the importance of the occasion. Constantine Porphyrogenitus has preserved for us the schedule of multiples customary in the middle of the tenth century. The caliph of Baghdad and the sultan of Egypt occupied the highest place in the hierarchy, with bullae of four solidi (βούλλα χρυσῇ τετρασολδία); the khan of the Khazars, the king of Armenia and his rival of Vaspurakan, and the patriarchs of Alexandria, Antioch, and Jerusalem were entitled to bullae of three solidi; and most other sovereigns, whether kings of Georgia, khans in south Russia, doges of Venice, sovereigns of France and Germany, or Muslim emirs in North Africa, rated bullae of only two solidi.³ On special occasions these figures could be exceeded. The sultan of Egypt was the recipient of a letter from Constantine VII and Romanus II to which was appended a

³ *De ceremoniis*, II. 48 (Bonn ed., I, pp. 686-92). The pope was normally entitled to a bulla of only one solidus, though Constantine records an occasion on which he received one of two solidi.

bullae of twelve solidi, i.e., two ounces,⁴ and the gold bulla attached to a letter from Constantine IX to the Emperor Henry III was large enough, when melted down, to make a chalice for the church of Sts. Simon and Jude at Goslar.⁵ The largest surviving bullae, however, are of four solidi.

The use of gold bullae for sealing the more formal categories of domestic documents, notably those involving grants of estates and privileges, and the evolution of the χρυσόβουλλος λόγος and the χρυσόβουλλον σιγίλλιον have been discussed at length by Dölger and Rouillard and need not be examined here.⁶ How early the use of gold bullae started is difficult to say. Dölger has argued that the *chrysobullos logos* took shape under Leo VI (886–912), but gold bullae for some purposes were in use prior to this reign. Little stress can be laid on the account in the Chronicle of Achimaaz of how Basil I sent a letter sealed with a gold bulla to Rabbi Schafetia when he summoned him to the capital to heal his daughter,⁷ since the chronicle dates from the mid-eleventh century and by then such a form of seal would be regarded as normal, but two gold bullae of Basil I are still in existence today. Though

these are the earliest ones actually known, there is strong circumstantial evidence for the use of such bullae in diplomatic correspondence in the first decades of the ninth century. Agobard of Lyons, writing in 826 or 827, refers to Jews in France having received letters from Louis the Pious which were furnished with gold seals,⁸ and it is fair to assume that such a practice would have been borrowed from Byzantium. Ohnsorge has indeed made a case for supposing that Charlemagne had received a letter sealed with gold as early as 803.⁹ Dölger has suggested¹⁰ that the use of gold bullae in foreign diplomatic correspondence makes them the descendants of late Roman medallions, which were also coin multiples and much employed as gifts to barbarian chieftains beyond the imperial frontiers, but their intrinsic character was so different—gold

⁴ *Epist. Karolini aevi*, III. 184: *ostendunt precepta ex nomine vestro aureis sigillis signata.*

⁵ W. Ohnsorge, "Legimus. Die von Byzanz übernommene Vollzugsform der Metallsiegel-diplome Karls des Grossen," in his *Abendland und Byzanz*, pp. 50–63. Cf. also P. Bonenfant, "L'influence byzantine sur les diplômes des Carolingiens," in *Mélanges H. Grégoire*, III (= *Annuaire de l'Institut de philologie et d'hist. orientales et slaves*, XI [Brussels, 1951]), pp. 61–77, esp. 72–7. No Carolingian gold bullae have survived, though some were known as late as the eighteenth century (L. de Grandmaison, "Les bulles d'or de Saint-Martin de Tours," in *Mélanges Julien Havet* [Paris, 1895], pp. 110–29, and G. Tessier, *Diplomatique royale française* [Paris, 1962], pp. 80–2; cf. also the appendix on "Die Metallbullen der Karolinger," to P. E. Schramm, *Die zeitgenössischen Bildnisse Karls des Grossen* [Berlin-Leipzig, 1928], pp. 60–70). The one surviving original of an early ninth-century imperial letter to a Frankish prince (Dölger, *Facsimiles*, no. 2) is badly damaged and no trace of seal survives.

¹⁰ *Schatzkammern*, p. 317. Their domestic use had also a "gift" character, manifesting the φιλοτιμία of the emperor. When Dölger originally developed the idea, in a review of an article of Alföldi on imitations of Roman medallions found in Hungary (in *BZ*, XXXIII [1933], pp. 469–70), he suggested that the gold bullae of which Constantine Porphyrogenitus wrote might have been separate objects, not attached to documents at all. In view of the number of early bullae now known, and the relationships between their weights and those of the solidus, such an idea must be rejected, though he is of course correct in saying that not all letters to foreign sovereigns were sealed with gold.

⁴ *Loc. cit.*, p. 689. According to a well-informed Arab historian, a letter of Isaac II Angelus to Saladin of 1189 bore a gold seal weighing fifteen dinars, i.e., probably twelve solidi also (Dölger, "Kodikellos," p. 38, note 166).

⁵ W. Ohnsorge, "Das nach Goslar gelangte Auslandsschreiben des Konstantinos IX. Monomachos für Kaiser Heinrich III. von 1049," in his *Abendland und Byzanz* (Darmstadt, 1958), pp. 317–32. The huge document itself, on purple vellum, made an attractive altar-cloth. The statement of a late writer that the bulla weighed twenty-two marks, i.e., over ten modern pounds, is an obvious exaggeration.

⁶ To the works of Dölger cited *supra* should be added G. Rouillard, "Note de diplomatique byzantine. Le χρυσόβουλλον σιγίλλιον et le χρυσόβουλλος λόγος," *Byzantion*, VIII (1933), pp. 117–24. How the weights of gold bullae were geared to the nature and importance of these domestic documents is not known, since they cannot be weighed and their over-all dimensions are not a sufficient guide.

⁷ D. Kaufmann, "Die Chronik des Achimaaz über die Kaiser Basilios I. und Leon VI.," *BZ*, VI (1897), p. 101. The chronicle was written at Oria, in South Italy, in 1055, and contains much fanciful matter.

bullae altogether lack the commemorative element which is essential to medallions—that a connection is rather unlikely.

Gold bullae are naturally of extreme rarity. The majority of those that are known are divided between Mt. Athos¹¹ and the Vatican,¹² many of them still attached to the documents they authenticated. The Mt. Athos group belongs mainly to either the second half of the eleventh century, the earliest being a bulla of Constantine IX of 1052,¹³ or to Palaeologid times; those in the Vatican are all of Palaeologid date. Apart from the bullae of the Latin Empire,¹⁴ the number of surviving specimens of other periods can be counted on the fingers of one hand: two of Basil I, one of Constantine VII, one of Manuel I Comnenus, and one of Isaac II Angelus. The last of these was described by Dworschak¹⁵ and two of the others are described below. The remaining two have been unrecognized up to the present because, although published, they were wrongly identified. The bulla of Basil I in the British

Museum was published by Wroth as a four-solidus coin.¹⁶ The bulla of Manuel Comnenus is attached to an Athosite document of Alexius I Comnenus of 1102, but, though its editors recognized it as a subsequent addition, they assumed without sufficient consideration that it must nevertheless be one of Alexius.¹⁷ Its type of the Infant Christ is that regularly used on the coins of Manuel,¹⁸ never on those of Alexius, whose bullae have invariably a seated figure of Christ, and though the Emperor's name is off flan—only ΤΩΚΟΜΝ(?) can be read—one need have no hesitation over assigning the bulla to Manuel.¹⁹

Gold bullae are rare only in part because they were of limited use. The archives on Mt. Athos, where a surprisingly large number are found attached to the wrong documents, show how easily they must have become detached in the first place. A bulla of Manuel I is found on a document of Alexius I, a bulla of Matthew Cantacuzene on one of

¹¹ For the early ones, G. Rouillard and P. Collomp, *Actes de Lavra*, I (897–1178) (Paris, 1937), pp. 175, 246, and pls. xxix, xxx; for the later ones, and for a few of the earlier ones, Dölger, *Schatzkammern*, pp. 322–8, pls. 116–19. The descriptions of the bullae in Rouillard-Collomp were the work of Gabriel Millet, who had them photographed in 1918. If one can believe the account of a Russian priest who claimed to have seen about 100 documents with gold bullae, in the course of a visit in 1847, a large number must have disappeared during the past century (J. Sabatier, "Plombs, bulles et sceaux byzantins," *Revue archéologique*, XV (1858), p. 99.)

¹² P. Sella, *Le bolle d'oro dell'Archivio Vaticano* (Città del Vaticano, 1934), nos. 11, 12, 20, 22, 23. The various mediaeval inventories which he prints show that some have been lost since the fifteenth century. On p. 2 are references to two unpublished ones of John VIII at Bologna and Milan. Cf. also G. Schlumberger, "Bulles d'or byzantines conservées aux Archives vaticanes," *Revue numismatique*³, XII (1894), pp. 194–9, reprinted in his *Mélanges d'archéologie byzantine*, I (Paris, 1895), pp. 181–5. The recent catalogue (1961) of V. Laurent covers only the Byzantine seals in the Medagliere Vaticano, not those in the Archivio.

¹³ Rouillard-Collomp, no. 26 (pl. xxix. 4b).

¹⁴ *Infra*, p. 242, note 22.

¹⁵ *Art. cit.* (*supra*, note 1), pp. 37–9 and pl. 1.1 (at Vienna).

¹⁶ W. Wroth, *Catalogue of the Imperial Byzantine Coins in the British Museum* (London, 1908), II, p. 435, no. 1 (pl. L. 10). It had been previously published by Madden in 1865.

¹⁷ Rouillard-Collomp, *op. cit.*, p. 133 (doc. 50. B) and pl. xxx. 7c; reproduced (and enlarged) in Dölger, *Schatzkammern*, p. 323, no. 4 (pl. 116.4). Rouillard-Collomp describe the obverse design quite correctly as that of the Infant Christ holding a scroll—it is that which art historians term the Christ Emmanuel type—Dölger's description of it as a *bearded* Christ being quite incorrect.

¹⁸ Wroth, *op. cit.*, pls. LXVIII. 14, 15; LXIX. 1–4.

¹⁹ What is described as a gold bulla of Manuel I was published by J. Sabatier, *Iconographie de cinq mille médailles* (St. Petersburg, 1847ff.), Planches byzantines, xxiii. 5, but it is too small to be a bulla and its general appearance points rather to its being a tetarteron of the eleventh century. The Emperor's name is not legible—one can read only [b] ACIAE — and the type does not correspond to that of any published coin. Possibly it is an unknown tetarteron of Michael IV, of whom no tetartera are at present known. I have been unable to discover its present whereabouts; Miss V. Sokolova informs me that it is not amongst Sabatier's coins now in the Hermitage at Leningrad. Schlumberger also claims to have seen a bulla of Manuel I, unusually small in size, in the hands of a Paris dealer (*Sigillographie de l'Empire byzantin*, p. 9), but its identity is not clear from his description.

John V.²⁰ and a gold nomisma of John II has been used as a replacement for a lost bulla on a document of John V.²¹ It is an oversimplification to suppose that all losses of bullae were due to simple theft, though this is sometimes the explanation. In 1794 the charters of the abbey of Groeninghe (near Courtrai) included three furnished with gold bullae of Baldwin I of Constantinople, but when they were brought to the Hôtel de Ville during the French invasion of 1794 a soldier tore them off and sold them to a jeweller at Oudenarde, who melted one of them and sold the others to collectors.²² But bullae were sometimes detached by their custodians for reasons of security. Gold objects may be safer in a strong-room than in a depository of documents. The gold bullae of the Carolingian charters at Farfa were kept in—and eventually lost from—the treasury of the abbey,²³ and it may have been through similar precautions that a monastery like St. John of Patmos failed to preserve any of its gold bullae while retaining the documents to which they were once attached. When such legal instruments ceased to serve any useful purpose, there would in any case be a strong temptation to detach bullae and convert them into church plate, or, in western countries after the Renaissance, to transfer them to the *cabinets de curiosités* of princes. Where gold bullae seem to have been systematically detached, as they have apparently been from the originals of Byzantine-Venetian treaties in the archives of

Venice, official action of some sort is probably the explanation.

The types of gold bullae resemble those of coins in their double representation of Christ on one face and the emperor on the other, but the details were determined by fashion rather than protocol and too much significance should not be read into them. If men in the thirteenth century were impressed by the standing figures of earthly and heavenly sovereigns on the gold bullae attached to documents of particular solemnity,²⁴ standing figures were employed as a matter of custom, not from any consideration of their religious significance. If one goes back to the ninth and tenth centuries, when busts and not standing figures were employed on the coins, one finds that this is also true of the bullae, and the bust of Christ is as likely to be balanced by a plurality of emperors (e.g., Basil I and Constantine) as by a single one. It was also a matter of convenience and common sense that the cord should be passed through a bulla in such a way that the figures on the latter should appear in an upright position. A consequence of this is that the die positions of bullae are always ↑↑. Those of coins, on the other hand, are normally ↑↓, the assumption being, apparently, that if one wants to examine the two faces of a coin, one turns it over in one's hand, while a bulla suspended on a cord could only be rotated in the vertical plane.

The question of which face of the bulla should be regarded as the principal one, i.e., the obverse,²⁵ is one that has been answered differently by Millet (in Rouillard-Collomp)

²⁰ Dölger, *Schatzkammern*, p. 327 (pl. 119, no. 2).

²¹ *Ibid.*, p. 325 (pl. 118, no. 2). Dölger doubted if it could be a bulla and suggested that it might be an unknown nomisma of John V. It is really a common nomisma of John II (Wroth, pl. LXVI. 6–8).

²² R. Chalon, "Trois bulles d'or des empereurs belges de Constantinople," *Revue de la numismatique belge*³, V (1861), p. 385. Of the two that survive, one is still in private hands and the other, which in Chalon's time belonged to C. A. Serrure, is now in the Bibliothèque Nationale. For the gold bullae of the Latin Empire, see G. Schlumberger, "Sceaux et bulles des empereurs latins de Constantinople," in his *Mélanges d'archéologie byzantine*, I (Paris, 1895), pp. 87–110, and his *Sigillographie de l'Orient latin* (completed by F. Chalandon and A. Blanchet, Paris, 1943), pp. 165–71.

²³ Bonenfant, *art. cit.*, p. 77.

²⁴ Cf. Dölger, *Schatzkammern*, p. 318.

²⁵ The term "obverse" is used by numismatists in three senses, which usually coincide but do not necessarily do so. It traditionally means the face of the coin with the principal type, e.g., the effigy of the ruler, but some numismatists, especially in Italy, use it for the face with the principal inscription, e.g., the royal name and title, and others try to avoid the subjective element implied by the distinction between "principal" and "secondary" features by using it for the face of the coin struck by the lower die, which is more resistant to wear than the upper one and so tends to be reserved for the principal type. This criterion is not always easy to apply, since it is often difficult to decide which way up a coin was struck.

and Dölger. For Millet the obverse is the face with the effigy of Christ: for Dölger, as for Père Laurent and most other scholars in the field, it is that with the bust or standing figure of the emperor. Numismatists find themselves in the same dilemma, and have traditionally, at least up to very recently, adopted the same solution as Dölger. A good case can be made for either side. From the technical point of view there can be no doubt that Millet is correct. This is most evident on the coinage. When the bust of Christ was first introduced on the nomisma and its fractions by Justinian II, the Emperor's effigy was transferred from the obverse to the reverse,²⁶ leaving the obverse to the representation of the Saviour. Justinian himself is shown holding the cross potent on steps or such other related symbol as up to then had regularly marked the reverse; the officina letter, which had customarily terminated the reverse inscription, was also now placed at the end of the imperial inscription accompanying the effigy of the Emperor. The same tradition is maintained in later periods. When an inscription runs continuously from one face of a coin to the other, it is on the face with the sacred effigy that it begins and on that with the imperial effigy that it ends;²⁷ when scyphate coins are introduced in the eleventh century it is always on the convex face, i.e., that struck by the lower die, that the figure of Christ or of the Virgin is found.²⁸ The theoretical

precedence of the heavenly ruler over his terrestrial representative is in any case self-evident. On the other hand, however, there is good reason to believe that the man in the street was accustomed to regarding the imperial image, which changed from one emperor to the next and consequently obtruded itself upon his attention, as the more important one. When George Pachymeres refers to the new type of nomisma introduced by Michael VIII, he describes it as having "on its back" (ὀπισθεν) a representation of the city,²⁹ though this accompanies that of the Virgin on the convex face of the coin, and the title to the abjuration of the union with Rome drawn up by Theodora, widow of Michael VIII, describes this as being certified "by her effigy engraved on a gold bull hanging on a purple cord,"³⁰ with no reference to the standing figure of Christ on the seal. The modern scholar is therefore within his rights in treating as the obverse whichever face of the coin or bulla he pleases, but for technical purposes it is best to accept what one presumes to have been the point of view of the departments which issued them.

II

The physical nature of gold bullae and the method of making them have been the cause of much uncertainty, partly because so few have been available for study and partly because their value makes some kinds of investigation impossible. Some scholars have assumed that they were struck from a single piece of gold, others that they consist of two pieces of gold either soldered

not in majesty, but as presiding over the marriage of Eudocia and Romanus IV; so the scene is transferred to the reverse. The same is true of the representations of Christ on the marriage solidi of Pulcheria and Marcian and of Ariadne and Anastasius I. On the Whittemore *boulloirion* described below, however, the bust of the saint is on the *upper* die.

²⁶ Pachymeres, *De Andronico Palaeologo*, VI, 8 (Bonn ed., II, p. 494).

³⁰ S. Pétrides, "Chrysobulle de l'impératrice Théodora (1283)," *Echos d'Orient*, XIV (1911), p. 26: κάτω διὰ τῆς οἰκείας στήλης ἐν χρυσίῳ βούλλῃ φερομένης καὶ ἀπηρωρήμενης δι' ὀξείας μετὰ ξίης. The original has disappeared and no gold bulla of an empress-consort—as distinct from that of the mid-eleventh-century Theodora, who was empress in her own right—has survived.

²⁶ See the very clear exposition of J. D. Breckenridge, *The Numismatic Iconography of Justinian II* (Numismatic Notes and Monographs, No. 144. New York, 1959), pp. 26–7. He points out that Grabar uses the terms "avers" and "revers" quite inconsistently, ignoring the significant numismatic and symbolic distinctions which they reflected at the time.

²⁷ E.g., on silver of Constantine IX, with ΔΕΥΤΟΙΝΑ ΩΖΟΙC accompanying the Virgin and ΕΥΕΣΒΗ ΜΟΝΟΜΑΧΟΝ the emperor (Wroth, *op. cit.*, p. 502, no. 16), on electrum of Alexius I, with ΚΕ ΡΟ (i.e., Κύριε βοήθει) ΑΛΕΞΙΩ accompanying Christ and ΔΕΥΤΟΤΗ ΤΩ ΚΟΜ the emperor (*ibid.*, p. 544, no. 23), and the hexameter verse on the miliaresion of Romanus III (*ibid.*, pp. 525–6, no. 7, wrongly ascribed to Romanus IV).

²⁸ A scyphate nomisma of Romanus IV (*ibid.*, pl. LXI. 12) appears at first sight an exception, but the figure of Christ is represented

together or stuck together with wax, others again that they are basically lead seals covered with thin plates of gold. Such problems might be solved by prying them open to examine their interiors or cutting sections through them and examining the surfaces under a microscope, but such drastic procedures are out of the question. The material at Dumbarton Oaks, however, allows one to arrive at some provisional conclusions of a general character which, even in default of a re-examination of the seals at Mt. Athos, may be of some value.

Since gold bullae were preceded in date by lead ones it will be convenient to begin by describing how these were made.³¹ They started as lead roundels produced by casting and having a small hole running through them from one edge to the other. Such roundels, which were produced in enormous numbers and could be bought wholesale anywhere in the Empire, have survived in fair quantity. The simplest and cheapest, probably those employed in sealing packages of merchandise, are small objects about an inch across and convex on both sides (fig. 12). Better quality ones, used for sealing documents, are of variable module, ranging from about $\frac{1}{2}$ " to 2" in diameter and are flat, either all over, like a coin, but much thicker, with a minute hole running through them (fig. 13), or with a raised ridge running from one edge to the other through which the hole passes (figs. 14, 15). Several slate or limestone moulds for making the last type of bulla were found in the Corinth excavations (figs. 10, 11).³² Running across the

³¹ Cf. G. P. Galavaris, "Seals of the Byzantine Empire," *Archaeology*, XII (1959), pp. 264-70, esp. 264-6.

³² Gladys R. Davidson, *The Minor Objects (Corinth, XII)* (Princeton, 1952), p. 328, nos. 2828-31 (pl. 134). I am grateful to Mr. Harvey S. Robinson for permission to reproduce nos. 2828 and 2829 here. The small depressions visible near the edges served to align the other half of the mould, which was furnished with rivets in the corresponding positions, when the two were placed together. Failure to align the two halves accurately explains why the edges of bullae often have an overlap or a projecting line of metal half way between the two surfaces, features which have sometimes led scholars to suppose that bullae were composed not of a single roundel but of two roundels hammered together.

depressions in the moulds for making each separate bulla, there is a pair of deep grooves in which a wire or metal rod was placed, so that when the casting was finished and the blank for the bulla extracted the wire or rod could be withdrawn and a hole would be left. When the bulla came to be used, this hole was somewhat enlarged at one end so that the cords attached to the document could be threaded through it, either side by side or looped together in such a way that the loop would be within the bulla and give a better grip.³³ Finally, the bulla was struck in a pincer-like instrument (*boullotirion*) on the jaws of which the designs of the seal were engraved.

The earliest gold bullae at Dumbarton Oaks must have been struck in the same fashion as lead ones, but later ones were made differently. The bullae fall into three groups according to whether they are made *a.* from a single piece of gold, *b.* from two thick roundels of gold struck as a unit, or *c.* from two thin roundels of gold struck separately and fastened together later.

a. Bullae of Basil I, Constantine VII, Theodora, and Michael VI.

These bullae all appear to have been struck, like lead ones, from single pieces of metal. The only orifices are those for the entry and exit of the cords and there is no trace of a joint or seam running round the circumference. This is also true of the bulla of Basil I in the British Museum. The edges of the two earlier bullae at Dumbarton Oaks are in such poor condition that one would hesitate to affirm this on their evidence alone, and they are so flattened that no investigation of their interior is possible, but the bulla of Theodora and apparently³⁴ that

³³ Cf. F. Philippi, "Zur Technik der Siegelbullen," *Archiv für Urkundenforschung*, V (1914), pp. 289-98, for a discussion of how papal bullae were made and fastened. He had apparently never seen any seal blanks. Cf. also Eitel, *op. cit.*, pp. 2-7, who argues that early papal bullae were struck with two separate dies, as is usual with coins, not with hinged dies.

³⁴ This reservation is necessary because there is a crack in the side of Michael VI's bulla which has opened along a short length of the edge in a manner which suggests that the bulla might be made of two pieces. This can scarcely

of Michael VI are solid throughout except for the central hole.

For these bullae there is therefore no problem. The blanks were made by casting, like lead bullae, with a hole down the center, and when this was enlarged to permit the passage of the silk cords they were struck in the ordinary way.

b. Bullae of Michael VII, Nicephorus III and Alexius I

The bullae of Nicephorus and Alexius are made of two separate pieces of metal, with a visible joint running the whole way round the circumference of the coin. The bulla of Michael VII is probably similar but is too badly preserved for this to be clear. On the other bullae the joint is of variable thickness and filled with a metallic solder which is darker in color than the rather whitish base gold of which the bullae proper are composed. Its exact composition cannot be made out but it is not lead, for it does not scratch easily and is not the right color, or niello, which would be too brittle and is not likely to have been used as a solder.³⁵ Gold-copper alloys can also be excluded because of their brittle character. The most reasonable assumption is that it is a gold-silver alloy inferior in fineness to the metal used for the bulla proper, but one cannot exclude the possibility of its being some kind of soft solder with a proportion of tin in its composition.³⁶ It is evident from the bad double-

be the case, however, for the sides of the orifices where the cords enter and leave show no trace of any join.

³⁵ These paragraphs owe much to the helpful comments of Mr. Rutherford J. Gettens and Mr. William Thomas Chase of the Freer Gallery of Art, who were kind enough to examine the bullae with me and give me the benefit of their advice.

³⁶ Gold is normally soldered with what is technically called "hard solder," an alloy of gold and silver with a lower melting point than pure gold. Soft solder, with a very low melting point, is a mixture of lead and tin and is not normally used for any but the cheapest varieties of jewellery. On the problems involved, see H. Maryon, "Archaeology and Metallurgy. I. Welding and Soldering," *Man*, XLI (1941), pp. 118-24, and "Metal Working in the Ancient World," *American Journal of Archaeology*, LIII (1949), pp. 107-14, also R.

striking of some of those at Mt. Athos that bullae of this period were struck after the two parts had been joined together. It would not, in any case, have been possible to strike each face separately and join them with molten solder when the cords of the document were in place.

One may reasonably ask why the earlier method of making the bulla out of a single piece of gold should have been replaced by one which created the problem of inducing two pieces of metal to adhere to each other. A possible explanation is the debasement of the coinage, for it seems to have been taken for granted that the gold used for bullae and coins should be of the same quality. Debasement began in the 1030's and assumed serious proportions by the 1070's, when the fineness of the coins was reduced to about eight carats. Base gold, especially where there is much copper in the alloy, is less malleable than fine gold and cracks very easily, as one can see from the broken edges of tetartera of the third quarter of the eleventh century. This would be very serious in the case of bullae, which are much thicker than tetartera. A possible remedy would be the use of separate blanks of gold fastened together with a metallic solder, for provided this continued to adhere there would be less likelihood of the blanks cracking when the bulla was struck. The use of metal solder would of course affect the weights of bullae, which were supposed to be regulated in terms of the solidus, but after the middle of the eleventh century the metal was so base that the weight of gold in a bulla was already much below what it should have been.

c. Bulla of John VIII

This bulla consists of two extremely thin sheets of metal held together by a hard material which, where it is visible, is light brown in color and apparently non-metallic in character and is probably nothing more than wax. Such thin bullae could not have been struck in a *boullotirion*, for the impression of one face would have injured the other,

A. Higgins, *Greek and Roman Jewellery* (London, 1961), pp. 33-6. Mr. A. A. Moss, of the Dept. of Mineralogy in the British Museum, advises me that niello can be definitely excluded.

as occurs with thin Milanese denari of the late ninth century and with German half-bracteates of the early twelfth century. Each roundel of gold must have been made separately by the use of a die striking the metal against a soft backing, such as lead, leather, or pitch, so that the design appeared in relief on one face and in intaglio on the other. It was in this way that the German bracteates of the later middle ages were made.³⁷ The final sealing, one may conjecture, was made with the help of hot wax. This was poured on the inner face of one side of the bulla, the cords of the document laid in place, and the other side of the bulla then pressed tightly down so that the wax filled the hollows of the design and held the two firmly together. If this were done between folds of cloth or soft leather no damage would be done to the designs on either side.

Though the details are necessarily guesswork, it seems certain that the Palaeologid gold bullae must have been made in some fashion such as this. The explanation of the new technique is to be sought in western Europe. Seals in Latin Christendom were normally of wax, not lead, and western gold bullae, of which the earliest surviving specimens date from the twelfth century, are very large in diameter, like Palaeologid seals, and consist basically of circular boxes of thin gold filled with wax.³⁸ Gold bullae of the western pattern were introduced into Constantinople by the Latin emperors, and their

³⁷ Bracteates are uniface silver coins of a kind struck in many parts of Germany in the twelfth and thirteenth centuries. Their explanation is the decline in weight of the penny in the Salian and Hohenstaufen periods. In some regions (e.g., Westphalia) this led to a shrinkage of the flan and the emergence of small thick coins. In others (e.g., Saxony), after an intermediate period of half-bracteates with flans so thin that the impression on one face of the coin spoiled that on the other, all attempt to provide a design for both faces was abandoned and so-called bracteates were struck with a single die against a soft surface.

³⁸ Philippi, *art. cit.*, pp. 297–8. Through the kindness of their curator, Dr. Erich Meuthen, I was able in the summer of 1965 to examine the five imperial German gold bullae (Frederick II, Louis IV, Charles IV, Sigismund, and Frederick III) in the Stadtarchiv at Aachen.

large area and showy design made them much more impressive objects than those of the Comnenian period. It was only natural that the Palaeologids should have adopted something similar, even if their bullae were purely Byzantine in the details of their design.³⁹

No *boulloteria* for gold bullae have survived, but they were presumably of the same type as those used for lead ones, i.e., small iron pincers of which the inner faces of the two gripping heads were engraved as seal matrices and the outer sides built up as cylinders of metal so that the faces could be hammered together. Three specimens of such *boulloteria* have been published. One, found near Brusa, is in the Bibliothèque Nationale;⁴⁰ a second, found in Bulgaria, is in the museum at Sofia;⁴¹ and a third, of unknown provenance, which is illustrated here (fig. 9), is in the Fogg Art Museum (Whittemore bequest). The last has been a source of some confusion, since it was originally published as a coin-die used for

³⁹ It is possible that the new pattern may have antedated 1261, but no bullae of the emperors of Nicaea are known. Palaeologid bullae differ from those of western Europe in that they are not boxes, with sides 3 mm. or 4 mm. deep, but have their faces adhering directly to each other. An unpublished bulla of the despot Thomas Angelus of Epirus (ca. 1290–1318) in the British Museum, which Professor Ernst Kitzinger kindly brought to my attention, resembles the Palaeologid ones in being very thin and made from two separate plaques of metal, but these were apparently soldered together before striking. Miss L. Dobson, who kindly examined the bulla for me, points out that the two plaques were of slightly different sizes and that after the bulla was struck the rim of the larger plaque was folded over the edge of the smaller one and pressed flat so as to conceal the seam round the edge. The bulla weighs 7.13 g., but this includes traces of a mount and the original weight may have been that of a 1½ nomisma, like the Palaeologid bullae. The diameter is 31 mm.

⁴⁰ G. Schlumberger, "Un 'boulloterion' byzantin ou appareil à fabriquer les sceaux de plomb de l'époque byzantine," *Comptes-rendus des séances de l'Académie des Inscriptions et Belles-Lettres* (1911), pp. 411–17. It was found in company with a large iron hammer-head, the wooden handle for which had disappeared.

⁴¹ N. A. Mouchmov, "Un nouveau boulloterion byzantin," *Byzantion*, IV (1927–8), pp. 189–91.

striking solidi of the mid-sixth century.⁴² In reality it is a *boullotirion*, having on one face the effigy of St. Nicholas and on the other an inscription with the name of its original owner.⁴³ A fourth *boullotirion*, whose whereabouts is now unknown, was seen by Schlumberger in the hands of an Athens dealer in the 1880's.⁴⁴

The earliest bullae are those which are closest in type and general appearance to coins, and though they are in much higher relief there can be no doubt that the matrices for them were cut in the mints by the workmen responsible for making the dies for nomismata. There is nothing unusual in such a linking of functions; the cutting of seal matrices is a regular branch of mint activity at the present day. The resemblance between bullae and coins lasted into the Comnenian period, but under the Palaeologids it disappeared. The large bullae of the final period of Byzantine history have the appearance of repoussé-work quite different from that produced by die-sinkers working with burins and punches, and it seems likely that they were being made by court jewellers and not at the mint.

A disconcerting feature of the early bullae is the way in which the smaller multiples were struck with dies much larger than the

surface of the bulla itself, so that the inscription is off the flan. The explanation is the use of only one size of matrix, that appropriate to a four-solidus bulla, which was made to do duty even when a smaller bulla was all that was required. This was a reflection of a bad mint practice common in several periods of Byzantine history. Tremisses and half-folles of the sixth and seventh centuries, which in general had the same obverse types as the semisses and folles, often have much of the obverse inscription off the flan and the emperor's bust very large in relation to the total size of the coin.⁴⁵ The workmen were in fact saving themselves the trouble of making proper lower dies for the smaller denominations and were using those appropriate to semisses and folles instead. There is in general a contrast between the high quality of the bulla matrices and the slovenly manner in which they were used, the impressions being often badly centered and double striking having obscured parts of the inscription and type.⁴⁶

The connection between imperial bullae and the mint is also the most likely explanation of a curious non-monetary function which Byzantine minters were from time to time called upon to fulfil. Constantine Porphyrogenitus, in describing Zeno's death-bed, remarks incidentally that there were present three groups of officers, the *vestosakranoi*, the painters (Λωγράφοι), and the moneyers (μνητάριοι) who had come to perform their customary tasks.⁴⁷ The first were no doubt charged with laying out and robing the corpse and the second with

⁴² C. C. Vermeule, *Some notes on ancient dies and coining methods* (London, 1954), pp. 7-9. This description had previously been published in *Spink's Numismatic Circular*, LXI (1953), pp. 397-8. It is illustrated as a coin-die in J. Porteous, *Coins* (London, 1964), p. 46, fig. 63.

⁴³ V. Grumel, "Le boullotirion byzantin du Fogg Art Museum," *Revue des études byzantines*, XV (1957), pp. 211-4. Grumel had seen it in a dealer's hands in the bazaar at Istanbul in the early 1930's, before Whittemore acquired it. Through the kindness of Mr. John Coolidge I have been able to examine it and verify its identity with that seen by Grumel, which in view of the wide discrepancies in the descriptions one would otherwise be justified in doubting (P. Grierson, "A Supposed Byzantine Coin Die," *Num. Circ.*, LXXIII [1965], p. 232).

⁴⁴ Schlumberger, *Sigillographie de l'empire byzantin*, p. 10. The dealer's price was too high, and Schlumberger declined to acquire it. Mr. Thomas O. Mabbott informs me that some years ago he saw one half of a *boullotirion* on exhibition at the Walters Art Gallery in Baltimore, but I have been unable to discover what has become of it.

⁴⁵ Amongst the coins of Justin I and Justinian of the mint of Antioch in the Bibliothèque Nationale there are several cases of actual die identities between the obverses of folles and half-folles. It was in this series that the practice first came to my attention, but I have since found it to have been customary at many mints.

⁴⁶ On the other hand, Millet's assertion (in Rouillard-Collomp, *op. cit.*, p. 82, descr. of pl. xxx. 3) that for one gold bulla of Nicephorus III "on a utilisé une bulle plus ancienne dont on a aplati les bords pour en effacer les vestiges" is incorrect. The die has slipped in the striking, and the letters which Millet read as MIXA and thought referred to a previous Emperor Michael are really the NIAT of *Botaniat*.

⁴⁷ *De ceremoniis*, I, 92 (Bonn ed., I, p. 422).

rougeing and painting the face of the deceased before it was exposed to public view. The function of the third has been much discussed,⁴⁸ but none of the suggestions—preparing a commemorative portrait coinage, verifying that it was indeed the emperor who had died, or placing Charon's obol in the mouth of the corpse—is in the slightest degree convincing. Where the technical competence of moneyers would be useful on such an occasion was in defacing the imperial seal once the emperor was dead, so as to prevent its improper use by unscrupulous officials before his successor had assumed full powers.⁴⁹ The obverse matrix, however, with the figure of Christ, was sometimes spared, for some of the bullae of Constantine XI have been struck with a matrix which had already done duty under John VIII.

III

The bullae at Dumbarton Oaks are eight in number.

1. *Basil I (867–86) and Constantine*. Solidus bulla. 869–79.

Obv. |||||ΥS ||||| (largely off flan).

Bust of Christ facing, bearded, with

⁴⁸ Cf. Ph. I. Koukoulès, Τὰ κατὰ τὴν ταφὴν τῶν Βυζαντινῶν βασιλέων, in Ἑπετηρίς Ἑταιρείας Βυζαντινῶν Σπουδῶν, XV (1939), pp. 58–60, and V. Laurent, "Numismatique et folklore dans la tradition byzantine," *Cronica numismatică și arheologică*, nos. 119–20 (Bucharest, 1940), pp. 6–7 of offprint.

⁴⁹ Cf. the solemn removal of the Fisherman's Ring from the pope's finger as soon as he has been pronounced dead and its subsequent public breaking, in company with the matrices used for the lead bullae, at the first assembly of cardinals held during the vacancy (E. Waterton, "On the *Anulus Piscatoris*, or Ring of the Fisherman," *Archaeologia*, XL (1866), pp. 140–1). Such formal defacements of seal matrices, often carried out by jewellers summoned for the purpose, are frequently recorded in official documents, and the curious custom existed at Vienne of preserving in a coffer the broken seals of previous archbishops (*sigilla archiepiscopalia fracta seu sizalhata*). Cf. R. Vallentin, "Bris officiel du sceau de la Cour de l'Officialité de Vienne... à la mort de l'archevêque Pierre Palmier (1556)," *Bull. de la Soc. départementale d'archéologie et de statistique de la Drôme*, XXVIII (Valence, 1894), pp. 32–5. Cf. also H. Bresslau, *Handbuch der Urkundenlehre für Deutschland und Italien*, 2nd ed. (Berlin-Leipzig, 1931), II, p. 554.

cross behind head. Details of bust obscure, but in fact He holds Gospel Book in His left and raises His right hand in benediction before His body.

Rev. Inscription illegible, largely off flan. Busts of Basil I and Constantine (slightly smaller) facing, crowned, wearing loros and chlamys respectively and holding between them a labarum.

18 mm. 4.30 g. Struck by dies much larger than the flan. Details badly obscured by double-striking and by scraping in modern times to try and bring them out. The bulla has at one time been used as an ornament and the damage was in part done when removing the mount to which it was attached.

The types are those of the four-solidus bulla in the British Museum which was published by Wroth, though the dies are not identical. The complete inscriptions on this read: ΙHSΥS ΧΡΙΣΤΟΣ* and ΒΑΣΙΛΙΥS [ΕΤCONSTΑ]ΝΤ'ΑΥC. The gesture of benediction is clear on this multiple.

2. *Constantine VII Porphyrogenitus (913–59)*. Solidus bulla. 945.

Obv. Inscr. (presumably ΙHSΥSREXREΨNAN-ΤΙΥM) off flan. Bust of Christ facing, nimbate (2 pellets in each arm of cross), holding Gospel Book in left and with right hand in fold of cloak in gesture of benediction.

Rev. |||||ΣΤ ||||| (presumably +CONSTAN Τ'ΑΥΤ'CRATOR'), mainly off flan. Bust of Constantine VII facing, with long beard, wearing crown (with cross [not visible] and pendilia) and jewelled robe (modified loros), holding in right a globus surmounted by a patriarchal cross.

15 mm. 4.34 g. Struck by dies much larger than the flan.

The types correspond to those of the rare nomisma of Constantine VII⁵⁰ which is assigned by Wroth to the brief period between 27 January 945, when his colleagues Stephen and Constantine (sons of Romanus I) were deposed, and April of the same year, when he associated his own son Romanus II with himself as co-emperor.

⁵⁰ Wroth, *op. cit.*, p. 462, no. 44 (pl. LIII. 7).

The imperial costume on the solidus, which is the same as that on this bulla and on most of those that follow, is that described by Wroth as a "robe of square pattern" or a "robe with squares and pellets," and the description of it here as a "modified loros" requires justification. Its nature can best be seen from one of the finest of surviving Byzantine ivories, that in the Bibliothèque Nationale showing Christ crowning Romanus II and Eudocia, which like the solidus dates from the mid-tenth century. This shows that the "robe" is not, strictly speaking, a robe at all; it is a piece of heavily jewelled and embroidered cloth which hangs down the front of the body from the shoulders, like a long apron, and ends in a fringe at ankle height just above the bottom of the Emperor's tunic (dalmatic). At the back the same garment is broader and much longer, so that its train can be pulled round at the Emperor's right side, cross in front of his body, and hang over his left forearm. If this "robe" is compared with the traditional loros, the long jewelled scarf which had been one of the most conspicuous elements in the consular insignia of late Roman and early Byzantine times, it can be seen that it is its direct descendant.⁵¹ Both are of the same pattern and general appearance and the wearing of both involves the characteristic length of cloth hanging over the left forearm, but the garment has been simplified so as to eliminate the complicated winding of the loros twice across the Emperor's body. The "robe of square pattern," is, in fact, a made-up loros.

The bust of Christ on the obverse of the bulla is that known to art historians as the Pantocrator type, but its details are often so obscure on the small flans of coins and bullae that scholars have frequently been at a loss over how to describe it. It is that which normally occupies a medallion at the summit of the dome in Byzantine churches, the most familiar examples being those in the domes of Daphni and Arta and of the Kariye Camii

(Chora) and the Fetiye Camii (St. Mary Pammakaristos) at Istanbul; where there is no central dome, as at Cefalù and Monreale, it occupies the apse. In its most characteristic form Christ holds a closed Gospel Book to His breast in His left hand, while His right hand, barely protruding from a fold of His cloak, is raised at His right side in a gesture of benediction. Sometimes the book is held not in front of the body, but well to Christ's left, as at Cefalù and to an even greater degree at Monreale, so that hand and book face one another and it appears as if the benediction is directed towards the book. This may indeed be the correct interpretation of the gesture, but since this particular representation of Christ normally occupies the upper part of the dome, representing the heavens, it can also be understood as being directed towards that which occupies the center of the Cosmos, i.e., the world over which the Pantocrator exercises dominion. On coins and bullae the hand and gesture are often not visible, but the iconographical type can be recognized by the way in which the gesture involves the stretching of the cloak across the body in horizontal folds at the level of the book. These are shown as a series of horizontal lines, which have sometimes been misunderstood as representing Christ's right forearm and have misled commentators into supposing that the book was held in both hands. The book is sometimes, as at Cefalù and Monreale, held open at the text "I am the Light of the World" (John 8:12) and there can be little doubt that it symbolizes the Gospels as a whole; not, as has occasionally been suggested, the Book of Life alluded to in the Apocalypse. The traditional Pantocrator type takes the form of a bust, but the gestures which characterize it are sometimes found also on seated or standing representations of the Saviour.

3. *Theodora* (1055-56). Four-solidus bulla.

Obv. [+ΕΜ]ΜΑ ΝΟΒΗΛ Bust of Christ facing, nimbate (nothing in arms of cross), with short beard, holding Gospel Book in left and with right hand in fold of cloak in gesture of benediction. In field left and right ΙϞ ΧϞ.

Rev. +ΘΕΟΔΩΡΑ ΑΥΓΟ [VCTA] Bust of Theodora facing, wearing elaborate crown

⁵¹ The comparison can be most conveniently made in D. Talbot Rice, *The Art of Byzantium* (London, 1959), pls. 96, 97, where the Moscow ivory representing Constantine VII wearing the loros in its traditional form faces the ivory of Romanus II and Eudocia described in the text.

(with cross, 4 flower-tipped spikes, and pendilia) and jewelled robe (modified loros) with high collar covering the front of her throat, holding in her right hand a labarum and in her left a globus (or double globus?) surmounted by a trefoil.
27 mm. 15.21 g.

Though this bulla conforms to the general appearance of nomismata of the mid-eleventh century, it differs in many details from both the histamena and the tetartera of Theodora⁵². The contrast with the histamena, which have on their obverses a standing Christ and on their reverses the standing figures of the Empress and the Virgin, is complete. There is a general likeness to the tetartera, which have as their type the busts of Christ and of Theodora, but the details are not identical. The bust of Christ on the tetartera shows Him with a long beard; there is no inscription; and there are two pellets in each of the arms of the cross in the nimbus. In all essentials the bust on the bulla corresponds to that on the tetartera and early histamena of Constantine IX,⁵³ but the short inscription ΕΜΜΑΝΟΒΗΑ (instead of ΙΗΣ ΧΡΣ ΡΕΧ ΡΕΓΝΑΝΤΙΩΜ) was at this time used only on the copper coinage, not on the gold. Theodora's costume and the imperial ornaments she holds are also different. She wears a jewelled robe of square pattern, modified from the traditional loros, which is identical with that in which the emperors of the period are customarily depicted. She holds a labarum instead of a jewelled sceptre and the globus in her left hand is surmounted by a trefoil ornament instead of the customary cross. This form of globus had sometimes appeared on coins of the eleventh century—e.g., on a follis of Nicephorus Phocas and a nomisma of John Zimisces⁵⁴—but its particular significance, assuming that it had any, is unknown.

⁵² Wroth, *op. cit.*, pp. 505–6, nos. 1–5 (pl. LX. 1–4). Here and later I apply the word *histamenon* to the broad, thin nomisma of the mid-eleventh century when it is necessary to distinguish it from the smaller, thicker, and lighter *tetarteron*. See my note, "From Solidus to Hyperperon: the Names of Byzantine Gold Coins," in *Spink's Numismatic Circular*, LXXIV (1966), pp. 123–4.

⁵³ *Ibid.*, pp. 499–500, nos. 1–7 (pl. LVIII. 6–10).

⁵⁴ *Ibid.*, pl. LIV. 8, 12.

4. *Michael VI Stratioticus* (1056–7). Three-solidus bulla.

Obv. +ΕΜΜΑ ΝΟΒΗΑ Bust of Christ facing, nimbate (5 pellets in each arm of cross), with short beard, holding Gospel Book in left and with right hand in fold of cloak in gesture of benediction (details obscure). In field left and right ΙϞ ΧϞ.

Rev. +ΜΙΧΑ ΗΛΑ ΨΥΤΟΚΡΑΤ (sic) Bust of Michael facing, bearded, wearing crown (with cross and pendilia) and jewelled robes of modified loros type, holding labarum in right and with left hand probably on hilt of sword (details not clear).

27 mm. 12.40 g. The bulla is struck with matrices intended for a four-solidus bulla, like that of Theodora, but the gold blank was thinner than usual instead of being smaller in module, so that the whole of the inscription and type are on the flan.

The obverse of this bulla is of the same general type as that of Michael VI's histamenon,⁵⁵ but the reverse is different, that of the histamenon showing the standing figure of the Emperor being crowned by the Virgin. The heavily bearded portrait is the same, however, and bulla and nomisma agree in the use of the title *autocrator* instead of *basileus Rom(aion)* and *despotes*, which were preferred by Michael IV (1034–41) and Michael V (1041–2) respectively. There can in any case be no doubt of the ascription of this bulla, since a similar one (from different matrices) is attached to a dated chrysobull at Mt. Athos of January 1057.⁵⁶

5. *Michael VII* (1071–8). Solidus bulla.

Obv. No inscription visible. Bust of Christ facing, nimbate (5 pellets in each arm of cross), with short beard, between ΙϞ and ΧϞ; details of bust obscure.

Rev. No inscription visible. Bust facing, with short beard, wearing crown (with

⁵⁵ *Ibid.*, pl. LVIII. 5, as Michael V. Wroth's attributions of the coins of the four eleventh-century emperors named Michael are confused. What he describes on p. 509 as Type 2 of Michael VI belongs to Michael V.

⁵⁶ Rouillard-Collomp, *op. cit.*, I, p. 70, no. 27, and illustrated on pl. xxx. 7b.

cross and pendilia) and holding labarum; details of costume obscure.

19 mm. 4.55 g. Very base gold. Struck with dies much larger than the flan.

This bulla is so much smaller than the matrices used for striking it that the inscriptions are entirely off flan, and it is in such poor condition, the detail being rubbed nearly flat, that the effigy tells one nothing of the identity of the emperor depicted on it. Its previous owner attributed it to Constantine IX, but the very inferior quality of its gold, which cannot be above eight or ten carats and contrasts strongly with that of the bullae of Theodora and Michael VI, which appear to be of almost pure metal, makes so early a date impossible. The final collapse in the fineness of the nomisma took place only after 1071,⁵⁷ and the color of the metal is in line with that of the coins of Michael VII Ducas (1071-8) and Nicephorus III Botaniates (1078-81). Since such gold bullae of Nicephorus as are known show his standing figure, not his bust, it is reasonable to ascribe this bulla to Michael VII. It is true that there exist lead bullae of this Emperor with a standing figure, but a single type would not necessarily have been employed throughout the reign and the shape of the head, and the unusually high neck, correspond more closely to one of the coin portraits of Michael VII⁵⁸ than they do to any of Nicephorus III.

6. *Nicephorus III Botaniates* (1078-81). Two-solidus bulla.

Obv. No inscription. Bust of Christ facing, nimbate (pellet in each arm of cross), with short beard, holding Gospel Book in left and with right hand raised in benediction in fold of cloak. In field left and right $\overline{\Gamma C}$ and \overline{XC} .

Rev. + $\overline{\text{NIKHΦΔΕC ΠΟΤΡΟΤΑΝΙΑΤ}}$ (letters $\overline{\text{ΠΟΤΡ}}$ obscure). Nicephorus standing on footstool facing, wearing crown (with cross and pendilia) and jewelled robe (modified loros), holding labarum in right and globus cruciger in left.

24 mm. 8.64 g. Very base gold.

⁵⁷ Cf. P. Grierson, "The Debasement of the Bezant in the Eleventh Century," *BZ*, XLVII (1954), pp. 385-6, 391-3.

⁵⁸ Wroth, *op. cit.*, pl. LXII. 9.

This bulla, unlike the preceding ones of lower value, was struck with matrices of the appropriate size, as are the other known gold bullae of Nicephorus. The obverse type corresponds to that of a rather rare histamenon of the reign,⁵⁹ save that there is only one instead of two pellets on each arm of the cross in Christ's nimbus, while the reverse type is identical with that of the usual histamenon of the Emperor.⁶⁰ Two similar bullae, one in very fine condition, are preserved at Mt. Athos,⁶¹ but are from different matrices.

7. *Alexius I Comnenus* (1081-1118). Two-solidus bulla.

Obv. No inscription. Christ seated facing on high-backed throne, holding Gospel Book and with hand before Him or to right in benediction (details obscure). In field left and right $\overline{\Gamma C}$ and \overline{XC} .

Rev. + $\overline{\text{ΑΛΕΞΙΩΔΕ [CΠΟΤΩΚΟΜ]ΝΗΝ}}$
Alexius standing facing, bearded, wearing crown (with cross and pendilia) and long jewelled robe (modified loros), holding labarum and globus cruciger.

23 mm. 8.38 g. Very base gold.

The obverse type of this bulla corresponds to that of several billon coins of Alexius I. but there is no precise parallel to the reverse type; the figure of the Emperor does not show the characteristic elongated and narrow form which it assumes on the normal nomismata of the reign. Three similar gold bullae have been published by Rouillard and Collomp from the archives at Mt. Athos.⁶²

⁵⁹ *Ibid.*, pl. LXIII. 4.

⁶⁰ *Ibid.*, pl. LXIII. 5-7. The X on the shaft of the labarum on nos. 6 and 7 probably indicates a further degree of debasement in the metal used for the nomisma. It does not occur on any of the known bullae.

⁶¹ Rouillard and Collomp, *op. cit.*, pls. xxix. 4a (either somewhat enlarged or a higher multiple), xxx. 3.

⁶² Rouillard and Collomp, *op. cit.*, pl. xxx. 2, 5, 6. Enlargements of two of these are in Dölger, *Schatzkammern*, pl. 116, nos. 2, 3. The identifications proposed for the other bullae ascribed in both these works to Alexius I require extensive revision. Rouillard-Collomp list as his gold bullae nos. 1, 4, 5, 6, and 7c. No. 1, though now attached to a *chrysobollos logos*, is of lead, not gold (p. 117, doc. 43). No. 4 (= Dölger, 116.1) is not a bulla at all but a specimen of the exceedingly rare tetarteron of

8. *John VIII* (1423-48). Gold bulla (1½ solidus?).

Obv. No inscription. Christ standing, bearded, before a low throne, holding Gospel Book in left and raising right hand in benediction; in field above, $\overline{\text{IC}}$ $\overline{\text{XC}}$, below (to left) Φ over trace of letter M. All in broad plain border enclosed between two circles of pellets.

Rev. $\overline{\text{O}}$ John standing facing, with $\overline{\text{EH}}$ $\overline{\text{PA}}$ long beard, wearing crown $\overline{\text{XW}}$ $\overline{\text{AAI}}$ (with cross and pendilia) $\overline{\text{AVT}}$ $\overline{\text{O}}$ and long jewelled robe (modi-KPA $\overline{\text{AO}}$ fied loros), holding cross-T $\overline{\text{E}}$ $\overline{\text{GO}}$ sceptre in right and akakia C in left. Border as on obv.

38 mm. 6.64 g. A trace of the purple silk cord by which the bulla was once attached to the document it authenticated is still caught between the plaques of metal.

The bullae of the Palaeologids⁶³ no longer bear any resemblance to coins. This is only in part explicable by the general deterioration in the quality and appearance of the coinage in the fourteenth and fifteenth centuries and the abandonment of minting in gold, for the new type of bulla, made of very thin leaves of metal with a broad outside rim, was already in use under Michael VIII, who was still striking gold on a considerable scale. Whether the change antedated the recovery of Constantinople in 1261 we cannot say, for there are no gold bullae known,

Alexius I with a hole bored through it to allow of its attachment to a *chrysobullos logos* of Michael VIII. No. 7c (= Dölger, 116.4), as has been pointed out already (p. 241, note 17), is a bulla of Manuel I. No. 2 (= Dölger, 116.3), which Rouillard-Collomp do not identify, appears from Dölger's enlarged reproduction of the reverse to be assignable with confidence to Alexius I.

⁶³ See esp. Dölger, *Schatzkammern*, pp. 323-8 and pls. 117-9; Sella, *op. cit.*, nos. 11, 12, 20, 22, 23; and Dworschak, *art. cit.* (*supra* p. 239, note 1), pp. 40-5. Dölger's pl. 118, no. 2, which puzzled him greatly and which he suspected might be an unknown coin of John V Palaeologus and not a seal at all, is in fact a nomisma of John II Comnenus (cf. Wroth, pl. LXVI. 6-8) which has been pierced and attached to a chrysobull of John V, the correct seal for which had evidently been lost. Its style even as a coin makes impossible an attribution to John V.

other than those of the Latin Empire,⁶⁴ between the reign of Isaac II Angelus (1185-95, 1203-4)⁶⁵ and that of Michael VIII.⁶⁶ Nor is it clear whether the Palaeologid bullae were still adjusted in weight to a gold nomisma which by that time had passed out of existence.⁶⁷ Most of those which are known are still attached to documents and cannot be weighed, but the one of John VIII at Dumbarton Oaks and one of Constantine XI in the Münzkabinett at Vienna⁶⁸ both weigh 6.6 g. Possibly they were intended to represent 1½ solidi.

The types and inscription (Ἰωάννης ἐν Χριστῷ αὐτωρκάτωρ ὁ Παλαιολόγος) of this bulla of John VIII require no particular notice, but the Φ in the field has occasioned some discussion. Dworschak pointed out that it is found in slightly different forms on bullae of John VIII and Constantine; sometimes it is a simple Φ , but at others it seems to be a monogram of $\Gamma\Phi$ or $\Phi\Gamma$ (so Schlumberger). His suggestion was that it might stand for George Phrantzes, who he thought might have added to his other accomplishments that of cutting dies. Dölger, in publishing the material from Mt. Athos, brought several further letters and monograms to light and suggested that they were *Intervenientenzeichen*, the initials of those persons through whose good offices the documents had been obtained. It seems to me doubtful

⁶⁴ *Supra*, p. 242, note 22. These bullae are naturally of western type, though those of Baldwin II (1241-61) show the Emperor wearing traditional Byzantine costume (crown with pendilia, jewelled robe with end hanging over his left arm). Baldwin I (1204-5) and Henry I (1206-16) had been shown in western costume.

⁶⁵ Published by Dworschak, *art. cit.*, pp. 37-9. It is in the Münzkabinett at Vienna.

⁶⁶ Possibly the change in size was suggested by the bullae of the Latin emperors, which are about 40 mm. in diameter and made with plates of thin gold.

⁶⁷ Byzantine gold coinage—it was by then badly debased—was last struck on any considerable scale under Andronicus II (1282-1328), and the nomisma, by now regularly called a hyperperon, was thenceforward a money of account.

⁶⁸ Dworschak, *art. cit.*, pp. 40-1 (pl. II. 4). The bulla escaped recognition till the present century through being published by Eckhel as a coin (J. Eckhel, *Doctrina numorum veterum*, VIII (Vienna, 1798), pp. 272-3).

whether such individuals would have been in a position to affect the actual design of an imperial seal and I would prefer to see in them the marks of some responsible official in the chancery, making them analogous to the moneyers' marks which are common on Byzantine coins of the fourteenth and fifteenth centuries. The bulla of John VIII at Dumbarton Oaks in any case makes it clear that the monogram of Φ and Γ does not really exist. The Φ is plain, but there are traces of a diagonal line across it and two vertical lines at either side which show that it has been recut on the matrix over the letter M, which we know from Dölger's documents to have been present on other

bullae of the period. What has been read in other cases as a Γ accompanying the Φ is no more than the surviving trace of the same letter. The Dumbarton Oaks bulla was struck from the same two matrices as one of 1433 in the Vatican⁶⁹ and the obverse matrix was used under Constantine XI for the detached bulla at Vienna and for the Ragusa bulla of 1451 at Belgrade.⁷⁰

⁶⁹ Sella, *op. cit.*, no. 22.

⁷⁰ Dworschak, *art. cit.*, pl. II. 4; Dölger, *Facsimiles*, pl. xxv. 67. The obverse matrix was not continuously in use, however, for the Vatican bulla of John VIII of 1439 has a different one with Φ and no trace of any letter beneath (Sella, no. 23).



1



2



3



4



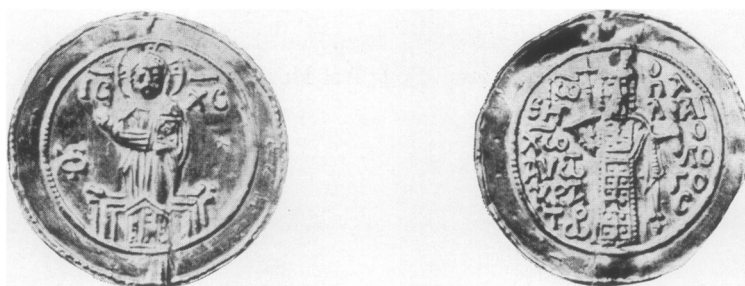
5



6



7



8



3 enlarged



6 enlarged

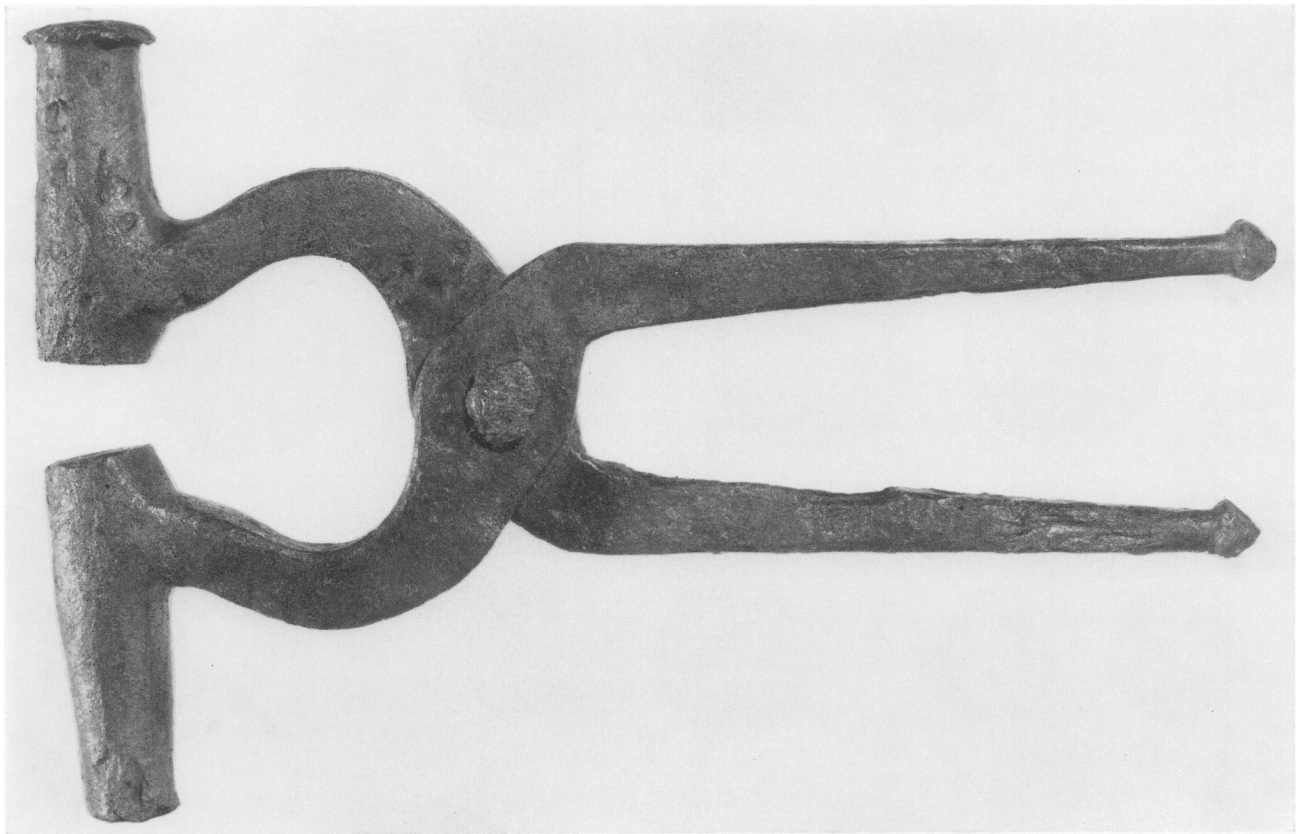


4 enlarged



GOLD BULLAE AT DUMBARTON OAKS

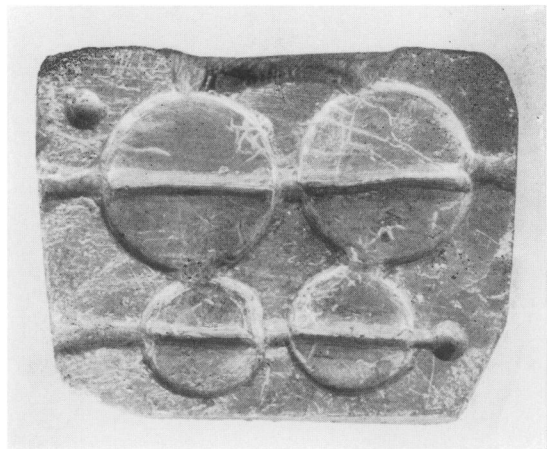
1. Basil I and Constantine; 2. Constantine VII; 3. Theodora; 4. Michael VI; 5. Michael VII;
6. Nicephorus III; 7. Alexius I; 8. John VIII



9. Cambridge, Mass., Fogg Art Museum. *Boulloirion*

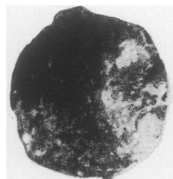


10.



11.

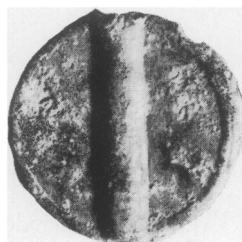
Slate Moulds from Corinth



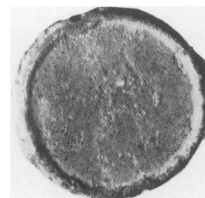
12.



14.



15.



13.

12-15. Blank Lead Bullae (slightly reduced in size)